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DEEP SEABED MINING: WHAT IS TO BE DONE ABOUT THE REGULATORY LACUNA?

KATHERINE REECE THOMAS*

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INTRODUCTION

As long ago as 1969, the United Nations General Assembly passed a resolution calling for a moratorium[1] on all deep seabed mining.[2] In 1970, the U.N. Declaration of Principles Governing the Seabed and Ocean Floor was signed by sixty-eight states, enshrining the principle that the deep seabed should be preserved for "peaceful purposes" and is the "common heritage of mankind."[3]

In 1982, the "Common Heritage of Mankind" declaration was incorporated into Article 136 of the United Nations Convention on the Law of the Sea (UNCLOS), covering the "Area and its resources;" the Area was defined as "the sea-bed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction."[4] This means land outside the Exclusive Economic Zones (EEZ) or Continental Shelves of coastal states.[5] Originally prompted by the discovery of polymetallic nodules containing nickel, cobalt and copper on the seabed east of Tahiti in the 1950s, the moratorium was passed after the possibility of exploiting the deep seabed by extracting minerals found therein was found sufficiently real by the U.N. General Assembly in 1969, and in 1982 by UNCLOS to include provisions in Part XI[6] for regulating human activity in the Area.[7] As drafted, UNCLOS Part XI proved unacceptable to many western powers, home to companies wishing to extract deep seabed minerals, and was amended by the 1994 Implementation Agreement.[8] The Implementation Agreement involved a dilution of the sharing of intellectual property provisions and a greater role for private contractors at the expense of a multinational operating body.

Currently the tension is between those who think mining should go ahead because in part the minerals are needed for the green transition, and those who believe that the scientific evidence does not indicate mining can go ahead without causing significant harm to the environment and

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[1] G.A. Res. 2574 (XXIV) D (Dec. 15, 1969).

[2] "Deep seabed" will be spelled without a hyphen as consistent with the U.N. Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 397 (entered into force Nov. 16, 1994) [hereinafter UNCLOS]. The only reference to the "deep seabed" (or "deep sea-bed") is in the Third U.N. Conference on the Law of the Sea, *Economic Implications of Sea-Bed Mineral Development in the International Area: Report of the Secretary-General*, at 8, 22, 36, 39, U.N. Doc. A/CONF.62/25 (May 22, 1974) (contained in the definition of polymetallic nodules when discussing governing preparatory investment in pioneer activities).

[3] G.A. Res. 2749 (XXV), Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction (Dec. 17, 1970) ("Common Heritage of Mankind Declaration"). Note the hyphen in sea-bed, and no reference to the *deep* sea-bed. For early commentary, see Alexandre Kiss, *The Common Heritage of Mankind: Utopia or Reality?*, 40 INT'L J. 3 (1985).

[4] UNCLOS, s*upra* note 2, art. 1.

[5] Neither the Convention on the Continental Shelf, April 29, 1958, 499 U.N.T.S. 311 [hereinafter GCCS], nor the Convention on the High Seas, April 29, 1958, 450 U.N.T.S. 79, refer to the deep seabed or waters beyond national jurisdiction. According to GCCS Article 1, the criteria for the outer limit of the continental shelf is one of exploitability based on depth, not distance from the coast. Note that the term "deep seabed mining" is sometimes used to relate to mining the seabed below 200 nautical miles which may not necessarily be equivalent to the Area. *See* YOSHIFUMI TANAKA, THE INTERNATIONAL LAW OF THE SEA 234 (4th ed. 2023) (defining the limits of the Area as "200 nautical miles from the baseline or the limit of the continental margin where it extends beyond 200 nautical miles").

[6] Part XI contains Articles 133–91. *See* UNCLOS, s*upra* note 2.

[7] For a historical account, see generally TANAKA, *supra* note 5, at 234–36.

[8] Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, July 28, 1994, 1836 U.N.T.S. 3 [hereinafter Implementation Agreement].

biodiversity.[9] The result is that so far there is no complete mining code for exploitation.

This Article will focus on the absence of regulation governing possible exploitation of the deep seabed in the Area through mining and the resulting risks for all involved including the planet. It will argue that deep sea mining should not go ahead in the absence of binding international rules because the benefits do not outweigh environmental and other regulatory risks. In other words, we cannot justify "ripping up the ocean floor to facilitate the energy transition."[10] Minerals in the deep seabed are not the key to the transition to green energy. Mining should not proceed without regulation—in other words, before a mining code is agreed upon.

The question is how the regulatory vacuum will be filled—given the slow pace of progress made so far by the international organization established by UNCLOS—to regulate exploration and exploitation in the Area in accordance with the principles of Common Heritage of Mankind. UNCLOS Part XI and the Implementation Agreement make provisions for the International Seabed Authority (ISA) and empower it to regulate deep seabed mining by means of binding exploration and exploitation regulations which will govern mining activities in the Area.[11] So far exploration regulations are in place, but there are no completed exploitation regulations. The so-called Mining Code has therefore yet to be finalized, let alone agreed upon. With mining companies keen to start exploitation, there is a real risk that the regulatory gap will hinder a realization of the principle that the Area is the common heritage of mankind.[12] It does seem that a moratorium is required.[13]

I. THE AREA AND THE AUTHORITY: COMMON HERITAGE

The international law sources today are UNCLOS (1982), the Implementation Agreement (1994, in force 1996), and customary international law. UNCLOS has been ratified by 168 parties, including 167 states (164 U.N. member states plus the U.N. observer state Palestine, as well as the Pacific islands, the Cook Islands and Niue) and the European Union. An additional fourteen U.N. member states have signed, but not ratified the Convention, including the United States, Turkey, and Venezuela. The Implementation Agreement which amended UNCLOS Part XI as originally drafted enabled some developed states, unhappy with the deep

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[9] For a useful summary of environmental concerns, see Daisy Chung et al., *The Promise and Risks of Deep-Sea Mining*, REUTERS (Nov. 15, 2023, 3:30 AM), https://www.reuters.com/graphics/MINING-DEEPSEA/CLIMATE/zjpqezqzlpx/ [https://perma.cc/7M8X-ZSJD].

[10] Kenza Bryan & Harry Dempsey, *'Playing with Fire': The Countdown to Mining the Deep Seas for Critical Minerals*, FIN. TIMES (Apr. 25, 2023), https://www.ft.com/content/95ec1105-3f5e-4055-bde8-a0c194f02d35 [https://perma.cc/PS7J-BYZN]. Micheal Widmer, metals strategist at Bank of America, is quoted as having asked, "[c]an [we] justify ripping up the ocean floor to facilitate the energy transition?" *Id.*

[11] *See* UNCLOS, *supra* note 2, arts. 2, 156.

[12] Lessons for space exploration and exploitation to be learnt from seabed mining are explored in MICHAEL BYERS & AARON BOLEY, WHO OWNS OUTER SPACE? (2023).

[13] *Five Things You Need to Know About Deep-Sea Mining*, ECONOMIST IMPACT: SUSTAINABILITY PROJECT (June 4, 2023) [hereinafter *Five Things*, ECONOMIST IMPACT], https://impact.economist.com/sustainability/ecosystems-resources/five-things-you-need-to-know-about-deep-sea-mining [https://perma.cc/98W2-RMQA] ("Several governments, including those of Germany, Spain, New Zealand, Ecuador, Costa Rica, Chile, Norway and the UK, support a moratorium on deep-sea mining until environmental regulations are in place. French president Emmanuel Macron has called for a complete ban. Global brands and major users of battery technology including Samsung, Google, Volvo, Philips and BMW have also backed a moratorium on deep-sea mining.").

seabed mining provisions, to sign and ratify UNCLOS. [14] The Implementation Agreement has been ratified by 151 parties (all of which are parties to the Convention), which includes 150 states (147 U.N. member states, the U.N. observer state Palestine, the Cook Islands, and Niue) and the European Union. An additional three U.N. member states (Egypt, Sudan, and the U.S.) have signed, but not ratified the agreement.

UNCLOS Part XI (with the Implementation Agreement) [15] establishes a regime for the seabed beyond national jurisdiction. The Area corresponds to approximately forty-four percent of the ocean floor, while continental shelves account for the approximately remaining fifty-six percent of the ocean floor. Domestic or national law applies to activities on shelves, subject to general rules of public international law and UNCLOS. Coastal states have sovereign rights with respect to activities on the continental shelf and set the rules for mining thereon. It is worth noting that state regulations are expected to be at least as strict as international regulations.[16] The Area is unlike any other sea area, governed as it is by the principle of Common Heritage of Humankind (as we should say now) that establishes that the Area "shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof."[17]

The common heritage principle represents a significant departure from coastal state domination of the seas which prevails in relation to the territorial sea, continental shelf, and EEZ regimes. It enshrines neither sovereignty nor absolute freedom. From the U.N. moratorium declaration, the world is now, some fifty-five years later, on the brink of mining.

A. *HOW HAS THE COMMON HERITAGE DECLARATION PLAYED OUT IN PRACTICE?*

Part XI of UNCLOS reflects the Declaration's principles: Articles 136, 137, 140, 141, 145 and 160 are particularly relevant. The result is that under the Convention (and arguably as a matter of customary international law[18]):

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[14] TANAKA, *supra* note 5, at 246–52.

[15] The Agreement is to be read with UNCLOS Part XI and in the event of conflict its provisions apply. *See* Implementation Agreement, *supra* note 8, art. 2. References hereinafter to UNCLOS Part XI are to that Part as supplemented by the Implementation Agreement unless otherwise specified.

[16] For example, the Norwegian government has approved plans for deep seabed mining on its extended continental shelf. *See* Ashley Perl, *Mining the Depths: Norway's Deep-Sea Exploitation Could Put It in Environmental and Legal Murky Waters*, CONVERSATION (Jan. 31, 2024, 6:08 PM), https://theconversation.com/mining-the-depths-norways-deep-sea-exploitation-could-put-it-in-environmental-and-legal-murky-waters-220909 [https://perma.cc/7FJU-XFYX]; Richard Milne, *Norway's Parliament Backs Deep-Sea Mining Plans*, FIN. TIMES (Dec. 5, 2023), https://www.ft.com/content/c1a503fb-5d4d-4f60-8ce4-2c861a03aea5 [https://perma.cc/UX8F-V4DE].

[17] G.A. Res. 2749, *supra* note 3, ¶ 2; *see* Kiss, *supra* note 3; *see also* Helmut Tuerk, *The Common Heritage of Mankind After 50 Years*, 57 INDIAN J. INT'L L., 259–83 (2017) (discussing Maltese Ambassador Arvid Pardo's call for a moratorium on mining).

[18] States that are not parties to UNCLOS cannot sponsor deep sea mining companies. However, the rules governing deep sea mining are now arguably binding on nonparties by virtue of their status as customary international law, so this is far from clear. The United States is not a party and adopted its own legislation, the Deep Seabed Hard Mineral Resources Act, in 1980. Deep Seabed Hard Mineral Resources Act, Pub. L. No. 96-283, 94 Stat. 553 (1980) (codified as amended in scattered sections of 30 U.S.C.); *see* Louise Woods & Elena Guillet, *Even Without US, Deep-Sea Mining Rules Likely To Prevail*, LAW360 (Aug. 8, 2023, 5:52 PM), https://www.law360.com/articles/1706813/even-without-us-deep-sea-mining-rules-likely-to-prevail [https://perma.cc/HT9E-8N9G]; Klaas Willaert, *Deep Sea Mining and the United States: Unbound Powerhouse or Odd Man Out?* 124 MARINE POL'Y, no. 104339, 2021, at 1, 4.

- All rights in the resources of the Area are vested in humankind as a whole;[19]
- No state or natural or juridical persons can claim, acquire or exercise rights in connection to the resources in the Area except under UNCLOS Part XI;[20]
- All mining and any mineral resources recovered may only be alienated in accordance with UNCLOS and the rules adopted by the ISA;[21]
- Mining can only take place by entities licenced by the ISA and sponsored by member states;[22]
- States must ensure "effective control" regarding state enterprises or sponsored entities;[23]
- Activities (including research) shall be carried out for benefit of humankind as a whole;[24]
- Financial and other benefits are subject to equitable sharing under rules of the ISA;[25]
- Necessary measures shall be taken to ensure "effective protection for the marine environment from harmful effects" of mining activities; and[26]
- The Area will be used for peaceful purposes.[27]

B. HOW ARE THESE DUTIES AND RULES TO BE IMPLEMENTED?

The regulation of the Area is in the hands of the ISA, which has supranational jurisdiction (covering states and natural persons) and exclusive jurisdiction (meaning no state or entity can act without the approval of the Authority).[28] The ISA is made up of 167 member states, and the European Union, and is mandated under the UNCLOS to organize, regulate, and control all mineral-related activities in the international seabed area for the benefit of mankind as a whole.[29] ISA also has the duty to ensure the effective protection of the marine environment from harmful effects that may arise from deep seabed-related activities.[30]

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[19] UNCLOS, s*upra* note 2, art. 137(2).
[20] *Id*. art. 137(3).
[21] *Id.*
[22] *Id.* arts. 139, 153 annex III (precluding the U.S.).
[23] INFORMAL WORKING GRP. ON INSTITUTIONAL MATTERS, 28TH SESSION OF THE INT'L SEABED AUTH., WEBINAR ON "EFFECTIVE CONTROL": SEPTEMBER 1ST, 2023; AGENDA (2023) [hereinafter EFFECTIVE CONTROL WEBINAR], https://www.isa.org.jm/wp-content/uploads/2023/09/Effective_Control_Webinar-Agenda.pdf [https://perma.cc/7JY7-EKPU] ("Several delegations have noted the need to discuss the issue of effective control within the framework of the informal working group on institutional matters. The cofacilitators of this informal working group agreed to include the topic in the group's programme of work. Subsequently, during the July 2023 Council Session, it was agreed that the facilitators would hold a webinar on effective control in order to guide the drafting of relevant regulations."). For latest developments, see the summary of progress at *Fast Facts 29th Session of the ISA Council—Part 1*, LINKEDIN (Apr. 17, 2024) [hereinafter *Fast Facts 29th Session*], https://www.linkedin.com/pulse/29th-session-isa-council-part-i-summary-key-takeaway-isbahq-wqtpe/ [https://perma.cc/A7ME-J574].
[24] UNCLOS, *supra* note 2, art. 140(1).
[25] *Id.* art. 140(2) (requiring equitable sharing of economic and other benefits in accordance with Article 160).
[26] *Id*. art. 145.
[27] *Id*. art. 141.
[28] *Id*. arts. 145 annex I.
[29] *Id.* arts. 140, 156–57.
[30] *Id.* art. 145.

C. *ISA STRUCTURE*

The Authority is made up of an Assembly, a Council, and advisory bodies.[31] The Assembly includes all member states of the ISA, and the Council has thirty-six of thirty-seven members elected by the Assembly. The Council acts as the executive, and its powers are set out in UNCLOS Article 162. The Council includes members from different groups of states with specific interests in the Area as set out in the illustration below. The Council has two advisory bodies. The Legal and Technical Commission (LTC) (composed of over forty members) advises the Council on all matters relating to the exploration and exploitation of non-living marine resources (such as polymetallic nodules, polymetallic sulphides, and cobalt-rich ferromanganese crusts). The LTC is responsible for drafting the rules, regulations, and procedures (RRPs) for approval by the Council and then the Assembly. Voting is by consensus, but if consensus is not possible there is a provision for voting by two-thirds majority.[32] This may become significant if a mining licence is made and there is no agreement on exploitation regulations as discussed below. The Finance Committee (composed of fifteen members) deals with budgetary and related matters.[33] In addition, there is the Secretariat which is composed of the Secretary-General[34] and approximately forty employees. There are also informal working groups dealing with a range of outstanding matters.

The ISA's powers therefore include the power to adopt rules and regulations relating to prospecting, exploring and exploitation in the Area. Regulations duly adopted are binding on all members of the ISA.[35]

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[31] *See* Aline Jaeckel, *The Area and the Role of the International Seabed Authority*, *in* ROUTLEDGE HANDBOOK OF SEABED MINING AND THE LAW OF THE SEA 157–77 (Virginie Tassin Campanella ed., 2024).

[32] For a useful summary of process within the ISA, see *Deep Seabed Mining Insights: Understanding the International Seabed Authority*, MINING REV. AFR. (Aug. 1, 2023), https://www.miningreview.com/business-and-policy/deep-seabed-mining-insights-understanding-the-international-seabed-authority/ [https://perma.cc/9TB4-76SY].

[33] *See, e.g.*, EFFECTIVE CONTROL WEBINAR, *supra* note 23; SECRETARIAT INT'L SEABED AUTH., SECRETARY-GENERAL ANNUAL REPORT 2023: JUST AND EQUITABLE MANAGEMENT OF THE COMMON HERITAGE OF HUMANKIND 65 (2023).

[34] Michael Lodge has been the Secretary-General of the ISA since 2017. His current term expires in 2024. *See Mr. Michael W. Lodge Reelected as Secretary-General of ISA*, INT'L SEABED AUTH. (Dec. 4, 2020), https://www.isa.org.jm/news/mr-michael-w-lodge-reelected-secretary-general-isa/ [https://perma.cc/C9AJ-EHBB].

[35] *See generally* Tanaka, *supra* note 5, at 238–42 and sources cited therein.

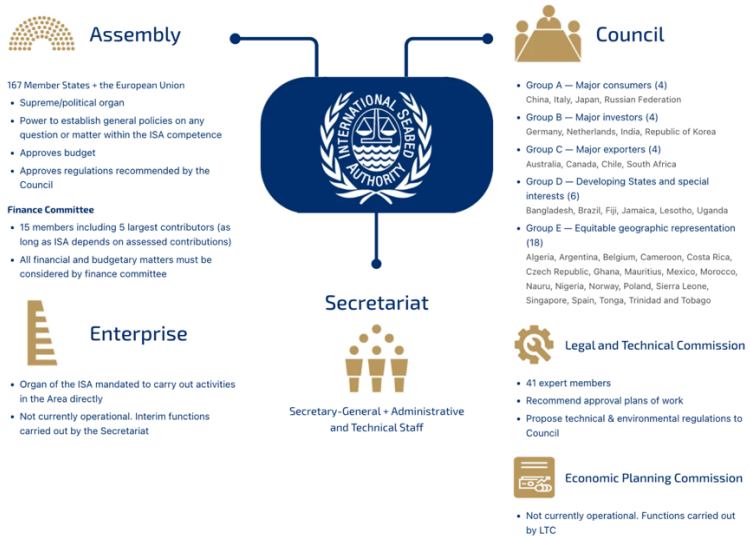

Figure 1: Organs of the ISA[36]

D. *THE IMPLEMENTATION AGREEMENT, SIGNED IN 1994 AND IN FORCE IN 1996*

With a preamble, ten articles, and an annex, the Implementation Agreement[37] prevails over Part XI of UNCLOS in the event of conflict. The Implementation Agreement modified UNCLOS in a number of important ways:

- It postponed creation of the organ of the ISA intended by UNCLOS to carry out activities in the Area directly (the "Enterprise"). The Enterprise is not operational, and its functions are carried out by the Secretariat. Under the Mining Code, as so far drafted, the ISA will grant licences for exploration [38] and eventually grant sponsoring states to sponsoring states and contractors.[39] The ISA itself will not be exploiting the resources. To date it appears that activities are undertaken by joint arrangement between the ISA and states and contractors through joint ventures;[40]
- While the Assembly and the Council have ultimate responsibility for ensuring the equitable sharing of benefits from exploitation, the Implementation Agreement gave more

[36] *See Organs of the International Seabed Authority*, INT'L SEABED AUTH. (last visited Aug. 4, 2024), https://www.isa.org.jm/organs/ [https://perma.cc/4ZUZ-WE6E].
[37] Implementation Agreement, *supra* note 8.
[38] There are currently thirty-one in place. *Exploration Contracts*, INT'L SEABED AUTH., https://www.isa.org.jm/exploration-contracts/ [https://perma.cc/N36K-8VUC] (last visited June 21, 2024).
[39] *See infra* Part II.
[40] *See* Implementation Agreement, *supra* note 8, annex § 2(2); UNCLOS, *supra* note 2, arts. 153 annex III; *see also* Tanaka, *supra* note 5, at 238–42. For recent information on the Enterprise relating to the appointment of an interim director, see *Mr. Eden Charles of Trinidad and Tobago Appointed Interim Director-General of the Enterprise*, INT'L SEABED AUTH. (Dec. 14, 2023), https://www.isa.org.jm/news/mr-eden-charles-of-trinidad-and-tobago-appointed-interim-director-general-of-the-enterprise/ [https://perma.cc/62QD-U7KZ]. *See also* Oliver Gunasekara, *Current Status of Deep Sea Mining Regulations*, IMPOSSIBLE METALS (Oct. 20, 2023), https://impossiblemetals.com/blog/current-status-of-deep-sea-mining-regulations/ [https://perma.cc/A3ZM-BWZ3] (covering the status of the Mining Code and contracts granted).

power to the Finance committee than intended originally under UNCLOS;[41]

- It introduced more market-oriented approaches and removed the production limitation;
- It removed mandatory transfers of technology;
- It reduced the financial terms of contracts in favour of contractors;
- It provided for economic assistance to developing countries affected by activities and the establishment of an economic assistance fund; [42] and
- It granted more decision making power to the Council.

E. *THE JURISDICTION OF THE ISA*

The jurisdiction of the ISA is limited to the Area—the seabed, ocean floor, and subsoil, not extending to the waters beyond the limits of national jurisdiction which remain high seas, governed by the High Seas freedoms established by customary law and UNCLOS Part VII.[43] The ISA's powers and functions are set out in UNCLOS Article 157: the organisation is limited to organising, carrying out, and controlling activities in the Area. It has legislative and enforcement jurisdiction as set out in Article 17 of Annex III to UNCLOS. It has the right to take measures to ensure compliance with its regulations and the power to sanction noncompliance. The ISA does not have a navy,[44] but in November 2023 it demonstrated that it has teeth. The Secretary-General of the ISA used his powers through the Prospecting and Exploration Regulations[45] to issue provisional measures in relation to the activities of Greenpeace's vessel *Arctic Sunrise* in the NORI-D contract area[46] within the Clarion-Clipperton Zone. Activists from the Greenpeace vessel had boarded the NORI vessel, *M/V Coco*, to disrupt its activities. The ISA interim measures were directed at the Netherlands government—as the flag state of the Greenpeace vessel—and invited it to consider steps under UNCLOS Article 87 (High Seas Freedoms) and Article 147 (activities in the Area). The Secretary-General also informed Denmark—as the flag state of *M/V Coco*—of NORI's concerns over the activities of Greenpeace and the

[41] While integration is ongoing, the issue is far from resolved. *See Equitable Sharing of Benefits,* INT'L SEABED AUTH., https://www.isa.org.jm/equitable-sharing-of-benefits/ [https://perma.cc/433D-5BHA] (last visited Mar. 22, 2024).
[42] Implementation Agreement, *supra* note 8, annex § 7(1).
[43] UNCLOS, *supra* note 2, art. 87(2) (High Seas Freedoms); *id.* art. 147(3) (activities in the Area).
[44] Regarding UNCLOS Article 18 of Annex III, ISA Secretary-General Michael Lodge acknowledged the enforcement concerns, writing,

> In relation to enforcement, the concerns of some member states can be easily understood. The Authority has neither ocean-going vessels nor deep-sea submersibles at its disposal. How can it adequately supervise activities that are out of sight and hugely expensive to monitor? These are reasonable concerns, and it is evident that the Authority will need to significantly upscale its regulatory capacity in the coming years.

Michael W. Lodge, *Regulating Access and Sustainable Development of Deep-Sea Minerals for the Benefit of All Humanity*, MARINE TECH. SOC'Y J., Nov./Dec. 2021, at 12, 14.
[45] Int'l Seabed Auth. Council, *Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area*, at 18–19, ISBA Doc. 19/C/WP.1 (Apr. 17, 2013), https://www.isa.org.jm/wp-content/uploads/2022/06/isba-19c-wp1_0.pdf [https://perma.cc/C278-FWHG] (Regulation 33).
[46] Nauru Ocean Resources Inc. is a subsidiary of The Metals Company, sponsored by the Republic of Nauru. *See NORI-D Project—Nauru Ocean Resources Inc.*, METALS CO., https://metals.co/nori/ [https://perma.cc/6QN9-BZDK] (last visited June 23, 2024).

alleged threat to safety. The measures included ordering *Arctic Sunrise* to keep a safe distance.[47]

NORI started proceedings in Dutch courts, resulting in an order that Greenpeace activists disembark from *M/V Coco*. However, no safety zone was ordered. Greenpeace treated the order as a victory and has stressed that the Dutch court questioned the Secretary-General's authority to take the measures he did.[48] The Secretary-General responded, in an interim report to the Council, essentially that his actions were taken under regulations giving him the authority, and that the full Council did not need to be involved.[49] His report further highlighted that Greenpeace, as an observer at ISA, is supposed to help the process of regulating deep sea mining, not engage in disruptive activities.[50] In an article critical of the Secretary-General's action, Dr. Shani Friedman highlighted that the authority of the ISA does not extend to the High Seas and that the measures taken by the Secretary General were essentially *ultra vires*:

> International law does not prohibit protests on the High Seas. However, the freedom of the High Seas must be exercised with due regards to other states' rights (UNCLOS, Art. 87). There is little doubt that Greenpeace has violated the freedom of the High Seas and other rules of international law by boarding the *MV Coco* unauthorized and damaging the vessel.
>
> However, the actions taken by the ISA to address this incident do not seem to be within the scope of its jurisdiction or authority under the Polymetallic Nodules Regulations. Furthermore, the ISA exercised its jurisdiction with respect to a maritime zone or conduct that are outside its capacity altogether, thus acting *ultra vires*. The ISA essentially took upon itself what is an obligation of states—to request the intervention of the flag state.[51]

In March 2024, the Secretary-General further reported to the Council during its 29th Session on the NORI incident and other allegations of interference with activities in the Clarion-Clipperton Area. The Secretary General repeated that the ISA has the right to issue provisional measures in respect

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[47] *See The Secretary-General of the ISA Takes Immediate Measures in Response to NORI-D Area Incident*, INT'L SEABED AUTH. (Nov. 28, 2023), https://www.isa.org.jm/news/the-secretary-general-of-the-isa-takes-immediate-measures-in-response-to-nori-d-area-incident/ [https://perma.cc/U3F6-ALY3]; *President and Vice-Presidents of the Council Issue Statement on Recent Incidents in NORI-D Contract Area*, INT'L SEABED AUTH. (Dec. 15, 2023), https://www.isa.org.jm/news/president-and-vice-presidents-of-the-council-issue-statement-on-recent-incidents-in-nori-d-contract-area/ [https://perma.cc/Q2FL-LNAX].

[48] *Court Confirms Greenpeace Right to Peaceful Protest as Activists' 200 Hour Long Protest Against Deep Sea Mining in the Pacific Continues*, GREENPEACE INT'L (Nov. 30, 2023), https://www.greenpeace.org/international/press-release/64037/ [https://perma.cc/6B73-4Q8S].

[49] SEC'Y-GEN., INT'L SEABED AUTH., INTERIM REPORT ON THE IMMEDIATE MEASURES OF THE SECRETARY-GENERAL OF THE AUTHORITY (2023).

[50] *See id.*

[51] Shani Friedman, *The Arctic Sunrise II—Does the ISA Have 'Enforcement Jurisdiction' on the High Seas?*, EJIL: TALK! (Dec. 12, 2023), https://www.ejiltalk.org/the-arctic-sunrise-ii-does-the-isa-have-enforcement-jurisdiction-on-the-high-seas/ [https://perma.cc/98DG-2ZW3].

of noncompliance under the Prospecting and Exploration Regulations.[52] It is not clear what all this would mean if unauthorised mining were to start.[53]

F. *STATES AND CONTRACTORS*

UNCLOS, as originally drafted, provided for an entity called the Enterprise to carry out mining in the Area.[54] The Implementation Agreement effectively mothballed the Enterprise and replaced it with a parallel system whereby mining is to be undertaken by private contractors sponsored by parties to UNCLOS.[55] As explained above, to date, exploration work has been done by mining companies sponsored by numerous states, including Nauru, pursuant to contracts entered into with the ISA. The nature of the relationship between the private entity doing the mining and the sponsoring state, and the extent to which that entity needs to be based in that state, raise questions about the meaning of "effective control" as used in the treaty. Multilateral corporations whose headquarters are based in states that are not parties to UNCLOS have incorporated subsidiaries in sponsoring states.[56] This debate about "effective control" is discussed below.

What powers does the ISA have over contractors? The ISA can suspend or terminate contractors' rights under a contract where activities are conducted in such a way as to result in serious, persistent, and wilful violations of the fundamental terms of the contract, or when contractors have failed to comply with a judicial decision.[57] The ISA can impose monetary penalties on contractors[58] and can suspend states from membership in the Assembly if they are in gross and persistent violation of Part XI.[59] It can also issue emergency orders to prevent serious harm to the marine environment.[60] The ISA's jurisdiction is thus supranational, as it has dominion over states and natural persons, and it is exclusive in that no state or natural or juridical

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[52] *See* Int'l Seabed Auth. Council, *Incidents in the NORI-D Contract Area of the Clarion Clipperton Zone, 23 November to 4 December 2023*, ISBA Doc. 29/C/4/Rev.1 (Mar. 19, 2024), https://www.isa.org.jm/wp-content/uploads/2024/03/2405417E.pdf [https://perma.cc/AZT2-X6MX].

[53] Note that NORI was criticised for failing to comply with its own risk management rules in relation to a slurry spill in the Pacific. Kenza Bryan, *Seabed Watchdog Accuses Miner of Ignoring Procedures After Spill,* FIN. TIMES (July 21, 2023), https://www.ft.com/content/25907d7e-8ba0-40fe-82f0-ee8d01d10bd1 [https://perma.cc/2E96-BJ97].

[54] UNCLOS, *supra* note 2, art. 170.

[55] Implementation Agreement, *supra* note 8 annex § 2.

[56] See UNCLOS, *supra* note 2, arts. 139, 153(2)(b). See, for example, Lockheed Martin, a U.S. company, has apparently sold its U.K.-registered deep sea mining company, UK Seabed Resources, to a Norwegian entity called Loke Marine Minerals. *Lockheed Martin Sells Deep-Sea Mining Firm to Norway's Loke*, REUTERS (Mar. 16, 2023, 6:43 PM), https://www.reuters.com/markets/deals/norways-loke-buys-uk-deep-sea-mining-firm-lockheed-2023-03-16/ [https://perma.cc/4RV4-QHLG].

[57] UNCLOS, *supra* note 2, annex III, art. 22 (liability of the ISA & Contractor); *see also Deep Seabed Mining Insights: Understanding the International Seabed Authority and the Decision-Making Process for the Adoption of Exploitation Regulations*, WATSON FARLEY & WILLIAMS (July 31, 2023), https://www.wfw.com/articles/deep-seabed-mining-insights-understanding-the-international-seabed-authority-and-the-decision-making-process-for-the-adoption-of-exploitation-regulations/ [https://perma.cc/8X6N-GLMF].

[58] UNCLOS, *supra* note 2, annex III, art. 22 (limited to actual damages). For a comprehensive explanation of liability arising out of Article 22, see TARA DAVENPORT, RESPONSIBILITY AND LIABILITY FOR DAMAGE ARISING OUT OF ACTIVITIES IN THE AREA: ATTRIBUTION OF LIABILITY (Liab. Issues for Deep Seabed Mining Ser. No. 4, 2019) and TARA DAVENPORT, RESPONSIBILITY AND LIABILITY FOR DAMAGE ARISING OUT OF ACTIVITIES IN THE AREA: POTENTIAL CLAIMANTS AND POSSIBLE FORA (Liab. Issues for Deep Seabed Mining Ser. No. 5, 2019). *See also* HANNAH LILY, SPONSORING STATE APPROACHES TO LIABILITY REGIMES FOR ENVIRONMENTAL DAMAGE CAUSED BY SEABED MINING (Liab. Issues for Deep Seabed Mining Ser. No. 3, 2018).

[59] UNCLOS, *supra* note 2, art 153; *id.* annex III, arts. 18–19.

[60] UNCLOS, *supra* note 2, art. 162.

person can act without the approval of the Authority.[61] The relationship between the contractor, the sponsoring state, and the Authority therefore raises complex questions at the intersection of international and domestic law. The contractors are creatures of domestic law, but they have duties and rights under the contracts which are governed by international law. As natural or juridical persons, the contractors, as corporate entities, are not endowed with legal personality in international law, and questions about the hybrid nature of this relationship arise.

There are two aspects to this relationship. First, what are the responsibilities and liabilities of state sponsors for actions taken by private law entities? Second, what states are entitled to be doing the sponsoring? In other words, how is the test of effective control to be interpreted?

G. *RESPONSIBILITIES OF SPONSORING STATES*

Articles 139, 153, and 235 of UNCLOS and Annex III set out the responsibilities of sponsoring states and are relevant to this question.

The ISA's powers over sponsoring states were explored in an Advisory Opinion rendered by the International Tribunal of the Law of the Sea's (ITLOS) Seabed Disputes Chamber in 2011.[62] The Chamber was asked to rule on the responsibilities and obligations of states sponsoring persons and entities with respect to activities in the Area.[63] The opinion was unanimous, concluding that a state's responsibility—to ensure that activities be carried out in conformity with UNCLOS—is not an obligation of result but rather an obligation only of due diligence, an obligation to deploy adequate means and use best efforts.[64] The opinion noted that a due diligence obligation is one which "requires the sponsoring state to take measures within its legal system. These measures must consist of laws and regulations and administrative measures."[65] The applicable standard is that the measures must be "reasonably appropriate."[66] The Tribunal went further, finding that there were some direct obligations on states under the Convention (in addition to responsibility for sponsored contractors). It found that states were obliged to apply the precautionary approach and the "best environmental practices."[67]

The tribunal also ruled that "[f]ailure of the sponsored contractor to comply with its obligations does not in itself give rise to liability on the part of the sponsoring State." [68] ITLOS is now looking at the issue of responsibility of states for climate change, and the meaning of the due diligence obligation will arise again.[69] The nature of the obligations of states

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[61] *See* Alberto Pecoraro, *The Regulatory Powers of the International Seabed Authority: Security of Tenure and Its Limits*, 53 OCEAN DEV. & INT'L L. 377, 379 (2022) (citing UNCLOS, *supra* note 2, annex III, art. 3).

[62] Responsibilities and Obligations of States with Respect to Activities in the Area, Case No. 17, Advisory Opinion of Feb. 1, 2011, ITLOS Rep. 10.

[63] *Id.* at 14–16.

[64] *Id.* at 74.

[65] *Id.*

[66] *Id.*

[67] *Id.* at 75.

[68] *Id.* at 76 (Reply to Question 2).

[69] The Commission of Small Island States had asked for an Advisory Opinion regarding the obligations of states in the face of climate change. The request asked:

> What are the specific obligations of State Parties to the United Nations Convention on the Law of the Sea ('UNCLOS'), including under Part XII:

or the ISA itself in respect of deep seabed mining do not seem to have been tested so far in domestic law, and it will be interesting to see how the ITLOS Advisory Opinions are treated in any such proceedings, perhaps in the context of judicial review.[70]

The issue of effective control goes to the heart of establishing mechanisms for ensuring real responsibility. It raises questions about the use of the corporate veil, parent company liability, and the status of multinational companies in international law. The question revolves around whether UNCLOS calls for sponsoring states to exert effective regulatory control over contractors they sponsor or whether what is required is effective economic control.

A significant ISA discussion paper on this issue concluded:

> It seems appropriate to draw the following four general conclusions. The first is that the most cogent interpretation of the phrase "effective control" is that it was designed to cover not only the formal legal position but also the practical position regarding control over a corporation. The second is that given that in interpreting UNCLOS, Article 91, ITLOS has focused on regulatory control, one would expect the same interpretation to be applied to Articles 139 and 153(2). The third is that it is for the sponsoring State, in the first instance, to satisfy itself that the rules in UNCLOS are, and continue to be, complied with. A declaration of sponsorship, a specific act emanating from the will of the State or States of nationality and of effective control, amounts to a declaration by the sponsoring State that it complies with Article 153(2). And finally, it is for ISA to ensure and monitor compliance with the provisions of UNCLOS and its regulations. Any disputes

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> (a) to prevent, reduce and control pollution of the marine environment in relation to the deleterious effects that result or are likely to result from climate change, including through ocean warming and sea level rise, and ocean acidification, which are caused by anthropogenic greenhouse gas emissions into the atmosphere?
> (b) to protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea level rise, and ocean acidification?

Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law, Case No. 31, Order 2022/4 of Dec. 16, 2022, at 1–2, https://itlos.org/fileadmin/itlos/documents/cases/31/C31_Order_2022-4_16.12.2022_01.pdf [https://perma.cc/CMM7-KERQ]. It is interesting to note that the U.K. has taken the position that "the relevant provisions of Part XII (in the United Kingdom's view, Articles 192, 194, 197–207, 212–213 and 222) are governed by a standard of due diligence and are thus obligations of conduct." Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law, Case No. 31, Comments of the United Kingdom of Oct. 2, 2023, at 5, https://www.itlos.org/fileadmin/itlos/documents/cases/31/Oral_proceedings/questions/Comments__United_Kingdom.pdf [https://perma.cc/4GZN-S74P]; *see also* Monica Feria-Tinta & Maurice K. Kamga, *Mining the Bottom of the Sea: Potential Future Disputes and the Role of the International Tribunal for the Law of the Sea*, *in* ROUTLEDGE HANDBOOK OF SEABED MINING AND THE LAW OF THE SEA, *supra* note 31, at 239–55. ITLOS delivered its Advisory Opinion on May 21, 2024. Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law, Case No. 31, Advisory Opinion of May 21, 2024, https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf [https://perma.cc/QNB7-SYTP].

[70] *See* Cymie R. Payne, *State Responsibility for Deep Seabed Mining Obligations*, *in* ROUTLEDGE HANDBOOK OF SEABED MINING AND THE LAW OF THE SEA, *supra* note 31, at 107–22; LILY, *supra* note 58.

> which cannot be resolved should be submitted to the Seabed Disputes Chamber. Third States should raise any concerns in the Council.[71]

A discussion of effective control was on the LTC agenda for the 27th Session, but was deferred to September 2023, when a webinar was held.[72]

At the 29th Session of the ISA in March 2024, the issue of effective control was discussed by the LTC and the Council. Nauru as a sponsoring state had submitted a statement on the meaning of effective control stressing that it should mean effective regulatory control rather than economic control.[73] A briefing paper on conceptual topics related to the Informal Working Group on Institutional Matters in the ISA's Exploitation Regulations Effective Control contains a useful summary of the pertinent questions and concludes:

> IV. Questions for Consideration
> 21. We propose the following questions to structure the conceptual discussion around "effective control" scheduled for the March 2024 session of Council:
> 1) Can Council agree on the overall purpose and rationale for "effective control"?
> 2) Does Council agree that our responsibility to develop "*the criteria and procedures for implementation of the sponsorship requirements […] in the rules, regulations and procedures of the Authority.*" includes a need to provide a clear definition of "effective control" in the Exploitation Regulations?
> 3) Do Council members prefer the 'regulatory control' or 'economic control' approach to "effective control" (or a mixture, or another option), and for what reason?[74]

At the Seventh Meeting of the Informal Working Group on Institutional Matters held during ISA Session 29 Part 1 there was discussion about the meaning of effective control but no clear progress. In the words of the summary released by the ISA:

> The delegations diverged on this matter. There were cautionary notes against sponsoring States of convenience and monopolization risks. Some favoured a mixed approach, combining regulatory and economic control. Many participants expressed the view that there was no need for a definition of "effective control" and that the language in the

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[71] CHRISTOPHER WHOMERSLEY, INT'L SEABED AUTH., EFFECTIVE CONTROL ¶ 34 (2023).
[72] *See* EFFECTIVE CONTROL WEBINAR, *supra* note 23; Int'l Seabed Auth. Legal & Tech. Comm'n, *Issues Related to the Sponsorship of Contracts for Exploration in the Area, Monopolization, Effective Control and Related Matters*, ISBA Doc. 22/LTC/13 (June 21, 2016), https://www.isa.org.jm/wp-content/uploads/2022/06/isba-22ltc-13_1.pdf [https://perma.cc/KGW7-TKTV]; *see also* TARA DAVENPORT, INT'L SEABED AUTH., THE RIGHTS AND OBLIGATIONS OF THE INTERNATIONAL SEABED AUTHORITY AND THE SPONSORING STATE WITH RESPECT TO ACTIVITIES IN THE AREA 58 (2023).
[73] Margo Deiye, Permanent Representative to the International Seabed Authority, Republic of Nauru, *Statement Delivered at International Seabed Authority 29th Session Council Meeting: Agenda Item 10; Effective Control* (Mar. 25, 2024), https://www.isa.org.jm/wp-content/uploads/2024/03/Nauru_Statement.pdf [https://perma.cc/M956-6G2F].
[74] INFORMAL WORKING GRP. ON INSTITUTIONAL MATTERS, INT'L SEABED AUTH., BRIEFING PAPER ON CONCEPTUAL TOPICS RELATED TO THE INFORMAL WORKING GROUP ON INSTITUTIONAL MATTERS IN THE ISA'S EXPLOITATION REGULATIONS (2024).

> legal regime set out by Part XI, with the guidance provided by the 2011 advisory opinion, was sufficient. Many participants also stressed that changing to an "effective economic control test" would disrupt existing sponsorship arrangements, undermine the effective participation of developing States in activities in the Area, create numerous practical challenges and potential legal conflicts and introduce instability and uncertainty in the Part XI legal regime. An interpretation of effective regulatory control is also supported by Article 9 (4) of Annex III to UNCLOS. The co-facilitators leading the discussion invited delegations to continue intersessional progress on implementation.[75]

These issues are material to the future of deep seabed mining. If effective control is not to mean effective economic control—in other words if multinational corporations incorporated in the Global North are to be able to mine using subsidiaries incorporated in sponsoring states—the connection between the entities behind the mining and the sponsoring states may not be close enough to ensure effective international control over mining.[76]

The role deep sea mining will play in domestic law should be briefly mentioned. This is highly complex and there is no space here to investigate domestic provisions, but many states have legislated, and the IAS website has a link to relevant domestic statutes.[77] The position of the United States is of course very significant, as it is not a party to UNCLOS, but is home to many multinational corporations which may be involved in mining using foreign sponsoring states.[78]

II. THE MINING CODE

The ISA's main task has been to develop what is referred to as The Mining Code. The Mining Code—as the underwater mining regulatory framework—will have an impact beyond UNCLOS. The code will be a comprehensive set of RRPs issued by ISA to regulate prospecting, exploration, and exploitation of marine minerals in the international seabed Area. The Mining Code will be made up of binding regulations and nonbinding recommendations or guidelines. It will be influential on the global approach to regulation of deep seabed mining[79]—specifically the

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[75] *Fast Facts 29th Session*, *supra* note 23.

[76] On multinationals and the tests of regulatory versus economic control, see ANDRÉS SEBASTIÁN ROJAS & FREEDOM-KAI PHILLIPS, EFFECTIVE CONTROL AND DEEP SEABED MINING: TOWARD A DEFINITION 1 (Liab. Issues for Deep Seabed Mining Ser. No. 7, 2019).

[77] *National Legislation Database*, INT'L SEABED AUTH., https://isa.org.jm/national-legislation-database [https://perma.cc/T532-EL88] (last visited Mar. 23, 2024). For U.K. practice, see James Harrison, *The United Kingdom and Seabed Mining*, *in* ROUTLEDGE HANDBOOK OF SEABED MINING AND THE LAW OF THE SEA, *supra* note 31, at 436–39.

[78] *See supra* text accompanying notes 18 and 54–59.

[79] Norway and the Cook Islands have accelerated efforts to mine the seabed within their respective national jurisdictions. *Client Alert: United Nations Environment Programme Underscores the Importance of Mining for the Clean Energy Transition*, VOLTERRA FIETTA (Jan. 24, 2024), https://www.volterrafietta.com/client-alert-united-nations-environment-programme-underscores-the-importance-of-mining-for-the-clean-energy-transition/ [https://perma.cc/KT3H-7RDC]; Milne, *supra* note 16. The Mining Code will apply in part beyond the Area. States with extended continental shelves must pay contributions to be administered by the ISA in accordance with UNCLOS Article 82. In addition, states mining on the continental shelf must comply with pollution regulations and other limits on exploitation set out in UNCLOS Articles 194 and 208. *See* KLAAS WILLAERT, REGULATING DEEP SEA MINING: A MYRIAD OF LEGAL FRAMEWORKS 13–18 (2021) ("Chapter 3: The Deep Sea Mining Regime on the Continental Shelf").

development of international customary law, which also binds nonparties to UNCLOS (notably the U.S.). To date, only regulations and guidelines for exploration have been passed and are in force.[80] Regulations for actual mining-exploitation have still not been issued. This is the current concern.

The ISA began to develop regulations to govern the exploitation of mineral resources in the Area in 2014 with a series of scoping studies. According to the ISA's website:

> Exploitation regulations aim to balance economic needs with rigorous environmental protection. Once in place, they will require any entity planning to undertake activities in the international seabed area to abide by stringent global environmental requirements. The regime to be established also requires a portion of the financial rewards and other economic benefits from mining to be paid to ISA to then be shared according to "equitable sharing criteria."[81]

The Draft Exploitation Regulations (DER) which were published by the ISA's Legal and Technical Commission in 2019 are not final. The ISA is continuing its work on standards and guidelines for mining. The standards will be legally binding on states, contractors, and the ISA, whereas the guidelines will be recommendatory in nature.[82] The regulations will govern applications for mining exploitation licences and require contractors applying for a licence to submit a "Plan of Work" demonstrating an "effective protection of the Marine Environment," including biological diversity and ecological integrity before licences can be granted.[83] They require states to provide an Environmental Impact Statement (EIS) to the ISA.[84] The EIS is to be prepared in accordance with applicable guidelines, standards, and best practice.[85] It is not really clear yet what this means. The DER include environmental protection elements, including provisions aimed at preserving the "precautionary principle" (the overriding one) and the "polluter pays principle."[86]

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[80] Since 2000, three different sets of RRPs applicable to exploration in the Area have been issued. As of January 31, 2023, thirty-one contracts for exploration were in force (nineteen for polymetallic nodules, seven for polymetallic sulphides and five for cobalt-rich ferromanganese crusts). Twenty-two contractors have obtained licences. *See Exploration Contracts*, *supra* note 38; ZACHARY DOUGLAS ET AL., PEW CHARITABLE TRS., IN THE MATTER OF A PROPOSED MORATORIUM OR PRECAUTIONARY PAUSE ON DEEP-SEA MINING BEYOND NATIONAL JURISDICTION 2, 20 (2023) [hereinafter PEW LEGAL OPINION]; *see also Seabed Mining Moratorium Is Legally Required by U.N. Treaty, Legal Experts Find*, PEW CHARITABLE TRS. (June 30, 2023), https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2023/06/seabed-mining-moratorium-is-legally-required-by-un-treaty-legal-experts-find [https://perma.cc/3X7V-XKCS] (summarizing the Pew legal opinion). A useful summary of the current position is available at *The Mining Code of the ISA*, UMWELTBUNDESAMT (May 19, 2022), https://www.umweltbundesamt.de/en/topics/water/seas/deep-sea-mining/the-mining-code-of-the-isa [https://perma.cc/ZY34-WMWM].

[81] *The Mining Code*, INT'L SEABED AUTH., https://www.isa.org.jm/the-mining-code/ [https://perma.cc/7NEK-YZM3] (last visited Mar. 24, 2024).

[82] The latest consolidated text was discussed at the last meeting of the ISA 29th Session Part 1. *See* Int'l Seabed Auth. Council, *Draft Regulations on Exploitation of Mineral Resources in the Area*, ISBA Doc. 29/C/CRP.1 (Feb. 16, 2024) [hereinafter *Draft Exploitation Regulations*], https://www.isa.org.jm/wp-content/uploads/2024/02/Consolidated_text.pdf [https://perma.cc/B75R-KFBC]; *see also The Mining Code*, INT'L SEABED AUTH., *supra* note 81.

[83] Int'l Seabed Auth. Council, *supra* note 82, at 20–42, 32.

[84] *Id*. at 80–83.

[85] *Id.* at 74–85.

[86] *Id*. at 15–16. Regulation 2 is subject to amendment as demonstrated by the Consolidated Text.

In line with the provisions of UNCLOS, the DER also include an inspection regime for the purposes of monitoring and enforcing compliance with the applicable legal framework. The DER also establish the need for environmental performance guarantees and an environmental compensation fund to allow the ISA to fund remediation in the event of serious harm where this cannot be met by the contractor.[87] An inspection regime is established for the purposes of monitoring and enforcing compliance with the legal framework.[88] The key issue at stake is whether the DER when adopted will meet the requirements of UNCLOS Article 145, which specifies that measures must "ensure effective protection for the marine environment from harmful effects which may arise from such activities."[89]

Critics have raged that the regulations are too soft, and that by requiring a threat of "serious harm" they set too high a threshold. It is argued that the "avoid, remedy or mitigate" language used in the DER is not suitable for deep sea mining and is not compatible with Article 145,[90] where the requirement is "effective protection for the marine environment from harmful effects."[91] It is further argued that fundamental principles, such as the effective protection of the marine environment and the common heritage of mankind, are not integrated within the Draft Regulations;[92] there is insufficient discussion of the precautionary principle (approach) which arises only under scoping, only one mention of the ecosystem approach, and no discussion of effective protection of the marine environment.[93] There are still big gaps in the position taken by states with respect to environmental concerns and benefit sharing.[94]

There are also big gaps in the understanding of deep-sea biodiversity and ecosystems. Key concerns include disturbance of the seafloor, sediment plumes, and pollution both from noise vibrations and light from surface vessels.[95] Based on the comments from NGOs and observers it appears that

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[87] *Id.* at 94–96.
[88] *Id.* at 132–45.
[89] UNCLOS, *supra* note 2, art. 145.
[90] *See, e.g.*, Chris Pickens et al., *From What-If to What-Now: Status of the Deep-Sea Mining Regulations and Underlying Drivers for Outstanding Issues*, MARINE POL'Y (forthcoming 2024), https://doi.org/10.1016/j.marpol.2023.105967 [https://perma.cc/ZSP5-9LVL].
[91] UNCLOS, *supra* note 2, art. 145.
[92] *See* Pickens et al., *supra* note 90.
[93] *See id.* For latest criticism, see World Wildlife Fund, *Brief for Governments at Part I of the 29th Session of the International Seabed Authority* (Mar. 18–29, 2024), https://wwfint.awsassets.panda.org/downloads/wwf-global-policy-brief-international-seabed-authority-march-2024.pdf [https://perma.cc/5UT3-RRB9].
[94] *See* Ryan Murdock, *Deep Sea Mining and the Green Transition*, HARV. INT'L REV. (Oct. 16, 2023), https://hir.harvard.edu/deep-sea-mining-and-the-green-transition/ [https://perma.cc/JT2V-KK8X] (discussing the ongoing ISA negotiations). The ISA is also considering an alternative proposal for pooling mining resources into a "Seabed Sustainability Fund." *See* Daniel Wilde et al., *Equitable Sharing of Deep-Sea Mining Benefits: More Questions than Answers*, 151 MARINE POL'Y, no. 105572, 2023 (providing an overview); Int'l Seabed Auth. Fin. Comm., *Development of Rules, Regulations and Procedures on the Equitable Sharing of Financial and Other Economic Benefits Derived from Activities in the Area Pursuant to Section 9, Paragraph 7 (f), of the Annex to the 1994 Agreement*, ISBA Doc. 28/FC/4 (May 11, 2023), https://www.isa.org.jm/wp-content/uploads/2023/05/2308964E.pdf [https://perma.cc/4ELV-M2AU] (requesting the ISA Finance Committee to consider questions regarding the fund, slated to be on the agenda of the 28th Session). For the latest news on the ISA deep sea mining negotiations, see *Latest News and Updates*, DEEP SEA CONSERVATION COAL., https://savethehighseas.org/isa-tracker/latest-news-and-updates/ [https://perma.cc/L553-YUG3] (last visited Aug. 4, 2024).
[95] *See* Catherine Blanchard et al., *The Current Status of Deep-Sea Mining Governance at the International Seabed Authority*, 147 MARINE POL'Y, no. 105396, 2023, at 6. *See generally* Robert Makgill et al., *Implementing the Precautionary Approach for Seabed Mining: A Review of State Practice*, *in* ROUTLEDGE HANDBOOK OF SEABED MINING AND THE LAW OF THE SEA, *supra* note 31, at 48–77; Diva Amon et al., *Assessment of Scientific Gaps Related to the Effective Environmental Management of Deep-Seabed Mining*, 138 MARINE POL'Y, no. 105006, 2022.

there are real issues to do with the quality of the required Environmental Impact Assessments given the gaps in knowledge about effects of deep sea mining. Issues arise from the absence of an environmental baseline and a lack of comprehensive independent scientific information to permit safe monitoring. Additionally, not enough has been achieved on regional environmental management plans.[96]

There is ongoing concern that the environmental performance guarantee, which is the financial bond, is only applicable to the end of mining (closure), not to mining itself.[97] It has been pointed out that provisions concerning the permitted quantity of mining and the collection of mining royalties remain contested. For instance, the process for calculating ore grade for royalty purposes and whether to assess royalties based upon wet or dry ore remain unsettled five years after the last Draft Regulations were first published.[98]

III. WHAT NEXT? WHAT HAPPENS NOW?

There is no governing framework for exploitation, and therefore commercial exploitation has not yet commenced. The Republic of Nauru, which is sponsoring The Metals Company (TMC), triggered the two-year rule in July 2021 which meant the ISA was obliged to "use best endeavors" to complete adoption of relevant RRPs by July 2023.[99] This did not happen.[100] The new target is 2025.[101] It is no surprise then that calls for a moratorium are getting stronger. Given the concerns, a growing number of NGOs, commercial enterprises, and states are calling for a moratorium or precautionary pause on exploitation of the Area. Even the U.K. apparently now favours one.[102] Until the gaps in scientific knowledge are filled or the ISA's institutional capacity is addressed, a precautionary approach requires the commencement of any commercial exploitation be deferred.[103]

The ISA says a moratorium or precautionary pause would not be consistent with UNCLOS. As ISA Secretary-General Michael Lodge put it,

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[96] Lea Reitmeier, *What Is Deep-Sea Mining and How Is It Connected to the Net Zero Transition?*, LONDON SCH. ECON. & POL. SCI. (July 27, 2023), https://www.lse.ac.uk/granthaminstitute/explainers/what-is-deep-sea-mining-and-how-is-it-connected-to-the-net-zero-transition/ [https://perma.cc/R4MQ-X5DQ]. Note in particular the reference to the UN Sustainable Development Goal 14 which is to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development." *The 17 Goals*, UNITED NATIONS DEP'T OF ECON. & SOC. AFFS., https://sdgs.un.org/goals [https://perma.cc/97GK-G576] (last visited July 1, 2024).

[97] On the environment generally, see *Protecting the Deep for Us All*, DEEP SEA CONSERVATION COAL., https://savethehighseas.org/ [https://perma.cc/T4ZP-N6N3] (last visited Apr. 24, 2024).

[98] *See also* INT'L SEABED AUTH., TECH. STUDY NO. 31, EQUITABLE SHARING OF FINANCIAL AND OTHER ECONOMIC BENEFITS FROM DEEP-SEABED MINING (2021).

[99] Implementation Agreement, *supra* note 8, annex § 1(15)(b).

[100] Both the 27th and 28th Sessions failed to adopt the relevant RRPs. *See ISA Council Closes Part II of its 28th Session*, INT'L SEABED AUTH. (July 24, 2023), https://www.isa.org.jm/news/isa-council-closes-part-ii-of-its-28th-session/ [https://perma.cc/V6JN-BB7G] ("The Council made significant progress concerning the negotiations on the draft exploitation regulations for mineral resources in the Area in an informal setting in plenary . . . and in the four working groups . . . . The Council expressed its intention to continue the work on the exploitation regulations with a view to adopting them during the 30th session in 2025.").

[101] *Id.*

[102] *See UK Supports Moratorium on Deep Sea Mining to Protect Ocean and Marine Ecosystems*, GOV.UK (Oct. 30, 2023), https://www.gov.uk/government/news/uk-supports-moratorium-on-deep-sea-mining-to-protect-ocean-and-marine-ecosystems [https://perma.cc/7RKP-6N2K].

[103] *See, e.g.*, Int'l Union for Conservation of Nature, General Statement at Part I of the 28th Session of the Council of the International Seabed Authority, Part I (Mar. 24, 2023), https://www.isa.org.jm/wp-content/uploads/2023/03/statement_IUCN.pdf [https://perma.cc/EJN6-MXJU].

any moratorium would be "anti-science, anti-knowledge, anti-development and anti-international law."[104] The Pew Charitable Trusts legal opinion stated:

> We consider the language of "moratorium" or "precautionary pause" obscures more than it reveals. Although we refer to that language in this opinion, we understand it to mean no more than the adoption of a legal measure to defer commencement of deep-sea mining until it can be carried out without risking significant harm to the marine environment. Understood that way, a moratorium or precautionary pause is not only consistent with UNCLOS, but is actually required by it. It is a core obligation of States Parties to protect and preserve the marine environment; it would be a violation of that obligation to enable the commencement of exploitation of the Area at a time when scientific understanding of the deep sea, the existing regulatory arrangements, and the ISA's institutional capacity are insufficient to ensure that outcome.[105]

Those who oppose a moratorium, including Nauru, rely on an interpretation of paragraph 15 of the Annex to the Implementation Agreement that would require the Council to consider and approve an application for a licence to exploit within two years of the trigger having been pulled as discussed above.[106] There has been an agreement on a roadmap to extend to 2025 but it appears that there is still no agreement on any procedure to handle provisional licence applications.[107]

One question is whether mining will commence before then.[108] If unregulated mining commences there are real issues for the environment and for liability. The view from would-be miners is that exploitation may go ahead even without final regulations, and they point out that under voting rules a two-thirds supermajority of the Assembly is required to prevent adoption of regulations proposed by the LTC advisory body.[109] TMC has said they intend to submit an exploitation application in 2024.[110] TMC plans

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[104] Michael Lodge, Sec'y-Gen., Int'l Seabed Auth., Énergie, Environnement et Climat: Proposition De Résolution 887—Audition [Energy, Environment and Climate: Proposed Resolution 887—Hearing], BELG. PARLIAMENT, at 2:24:04–2:24:11 (June 24, 2020), https://www.dekamer.be/media/index.html?sid=55U0739 [https://perma.cc/F24D-89GD]; *accord* Bryan & Dempsey, *supra* note 10.

[105] PEW LEGAL OPINION, *supra* note 79, ¶13.

[106] REPUBLIC OF NAURU, OPINION PAPER ON THE REGULATORY STEPS AND DECISION-MAKING FOR A PLAN OF WORK SUBMITTED TO THE AUTHORITY PURSUANT TO SECTION 1, PARAGRAPH 15 OF THE ANNEX TO THE AGREEMENT RELATING TO THE IMPLEMENTATION OF PART XI OF THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA (2021).

[107] *See Co-Facilitators' Briefing Note to the Council on the Informal Intersessional Dialogue Established by Council Decision ISBA/27/C/45*, INT'L SEABED AUTH. (Mar. 23, 2023), https://www.isa.org.jm/wp-content/uploads/2023/03/Co_Facilitators_Briefing_Note.pdf [https://perma.cc/CJC8-K2JT]; *see also* Int'l Seabed Auth. Council, *Decision of the Council of the International Seabed Authority Relating to the Possible Scenarios and Any Other Pertinent Legal Considerations in Connection with Section 1, Paragraph 15, of the Annex to the Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea*, ISBA Doc. 27/C/45 (Nov. 11, 2022), https://www.isa.org.jm/wp-content/uploads/2022/12/2225713E.pdf [https://perma.cc/SDE4-ZPZA]. For latest developments, see the summary of progress at *Fast Facts 29th Session*, *supra* note 23.

[108] Some suggest mining can go ahead. Catherine Clifford, *The Metals Company Announces a Controversial Timeline for Deep Sea Mining that Worsens the Divide in an Already Bitter Battle*, CNBC (Aug. 4, 2023, 11:57 AM), https://www.cnbc.com/2023/08/04/the-metals-company-puts-out-controversial-timeline-for-deep-sea-mining.html [https://perma.cc/Q3Z2-G83L].

[109] Gunasekara, *supra* note 40.

[110] *See* Clifford, *supra* note 107.

to initiate commercial production in early 2025, assuming that the exploration application is approved.[111] TMC indicated on August 23, 2023, that it had applied with the U.S. Department of Defence to get assistance with building a plant for processing or refining material it retrieves from the sea floor.[112]

CONCLUSION

An equitable legal framework is needed for use of the ocean's resources. The concept of Common Heritage of Mankind was supposed to ensure that sovereignty was not determinative with respect to the Area. Over fifty years from the original declaration of a moratorium, the world is on the verge of seeing unregulated deep seabed mining at a time when precious minerals on the seabed are arguably needed for the green transition that is vital to staving off climate change. The Implementation Agreement of 1994 made serious inroads into the visionary provisions of UNCLOS's Part XI legal regime for the Area. The failure of states to agree that mining should only be carried out by an international organisation (the Enterprise) as originally specified in the 1982 treaty, and a clawing back of significant transfer-of-technology provisions, contributed to the impasse the world is facing now. It has not been possible for the ISA to develop and agree to a Mining Code despite efforts over so many years, and the industry has arguably lost faith in the process. Technology has advanced exponentially since 1982 which has added to the pressures to start mining. It can now be done. States however are coming increasingly alive to the environmental dangers of deep-sea mining and calls for a moratorium are real and numerous. Even some large corporations have supported the call.[113] While common heritage remains the principle, its application in practice has proved elusive so far. International state-led efforts must be intensified to overcome this impasse or commercial mining will start in a regulatory vacuum which cannot be for the benefit of humankind.

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[111] Gunasekara, *supra* note 40.
[112] *See* Jael Holzman, *One Company's Ambitions Reflect America's Delicate Deep Sea Mining Dance*, AXIOS (Nov. 6, 2023), https://www.axios.com/2023/11/06/deep-sea-mining-metals-company [https://perma.cc/79YK-FVN4]; *see also* Clifford, *supra* note 108.
[113] *See Five Things*, ECONOMIST IMPACT, *supra* note 13.